Pending Claims:

13.   A method of calibrating glucose monitor data, the method comprising the steps of:

sampling glucose monitor data at a predetermined rate from a glucose sensor over a period of time;

deriving at least one glucose monitor data point from the sampled glucose monitor data at a predetermined memory storage rate;

obtaining at least one blood glucose reference reading from a blood glucose measuring device that corresponds with the at least one glucose monitor data point;

calculating a calibration factor using the at least one blood glucose reference reading and the corresponding at least one glucose monitor data point; and

interpreting the sampled glucose monitor data collected during the period of time retrospectively using the calibration factor post process.

14.   The method of claim 13, wherein the step of calculating a calibration factor further includes taking account of at least one previous calibration factor to calculate a new calibration factor.

15.   The method of claim 13, wherein the at least one blood glucose reference reading is at least two blood glucose reference readings and the step of calculating the calibration factor uses the at least two blood glucose reference readings and the corresponding at least one glucose monitor data point.

16.   The method of claim 15, wherein a calculation of the calibration factor is obtained using linear regression.

17.   The method of claim 16, wherein the linear regression is least squares linear regression.

18.   The method of claim 13, wherein a calculation of the calibration factor is obtained using non-linear regression.

19.   The method of claim 13, wherein a calculation of the calibration factor is obtained using a non-regression technique.

22.   The method of claim 13, wherein the predetermined memory storage rate is once every 5 minutes.

23.   The method of claim 13, wherein the glucose monitor data point that is derived at a predetermined memory storage rate is the result of utilizing at least 2 sampled values sampled from the glucose sensor at a rate faster than the memory storage rate.

24.   The method of claim 13, wherein at least one blood glucose reference reading is obtained during a predetermined calibration period, and wherein the calibration factor is calculated using at least one blood glucose reference reading after every predetermined calibration period.

25.   The method of claim 24, wherein predetermined calibration period is a 24 hours.

26.   The method of claim 13, wherein one or more calculations for calculating a first calibration factor is different than one or more calculations for calculating all subsequent calibration factors.

27.   The method of claim 26, wherein the calculation for calculating a first calibration factor uses a single-point calibration equation.

28.   The method of claim 27, wherein the single-point calibration equation includes an offset value.

29. The method of claim 27, wherein the calculation for calculating the subsequent calibration factors uses a linear regression calibration equation.

30. The method of claim 27, wherein the calculation for calculating the subsequent calibration factors uses a non-linear regression calibration equation.

31. The method of claim 27, wherein the calculation for calculating the subsequent calibration factors uses a non-regression calibration equation.

32. The method of claim 13, wherein a predetermined time shift is used to temporally correlate the at least one blood glucose reference reading from a blood glucose measuring device with the at least one glucose monitor data point obtained at the predetermined memory storage rate.

33. The method of claim 32, wherein the predetermined time shift is ten minutes.

34. A method of calibrating glucose monitor data, the method comprising the steps of:
sampling glucose monitor data from a sensor;
deriving interval values by applying clipping limits and averaging the post-clipped sampled glucose monitor data over a predetermined interval rate;
deriving at least one glucose monitor data point by averaging the derived interval values at a predetermined memory storage rate;
obtaining from another blood glucose measuring device at least one blood glucose reference reading that is temporally associated with at least one glucose monitor data point;
determining a calibration equation using the at least one blood glucose reference reading and the corresponding at least one glucose monitor data point; and
calibrating the sampled glucose monitor data using the calibration equation.

35.   A method of calibrating characteristic monitor data, the method comprising the steps of:

sampling characteristic monitor data;

deriving interval values by applying clipping limits and averaging the post-clipped sampled characteristic monitor data over a predetermined interval rate;

deriving at least one characteristic monitor data point by averaging the derived interval values at a predetermined memory storage rate;

obtaining from another characteristic measuring device at least one characteristic reference reading that is temporally associated with at least one characteristic monitor data point;

calculating calibration characteristics using the at least one characteristic reference reading and the corresponding at least one characteristic monitor data point; and

calibrating the obtained characteristic monitor data using the calibration characteristics.

36.   A method of claim 35, wherein the at least one characteristic reference reading is at least two characteristic reference readings.

37.   A method of claim 36, wherein a calculation for calculating the calibration characteristics is a linear regression calculation.

42.   An apparatus to calibrate glucose monitor data, the apparatus comprising:

means for sampling glucose monitor data;

means for deriving at least one glucose monitor data reading from the sampled glucose monitor data at a determined memory storage rate;

means for obtaining from another blood glucose measuring device at least one blood glucose reference reading that is temporally associated with at least one glucose monitor data reading;

means for determining a calibration equation using the at least one blood glucose reference reading and the corresponding at least one glucose monitor data reading; and

means for interpreting the sampled glucose monitor data collected during the period of time retrospectively using the calibration equation post process.

43. The method of claim 13, wherein the calibration factor is a non-linear calibration equation.

44. The method of claim 34, wherein the step of averaging the sampled glucose monitor data over a predetermined interval rate ignores a high and a low sampled value over the interval.

45. The method of claim 34, wherein the step of averaging the derived interval values over a predetermined memory storage rate ignores a high and a low derived interval value obtained during one cycle of the predetermined memory storage rate.

46. The method of claim 34, wherein the calculation of the calibration equation is obtained using linear regression.

47. The method of claim 46, wherein the linear regression is least squares linear regression.

48. The method of claim 34, wherein the calculation of the calibration equation is obtained using non-linear regression.

49. The method of claim 34, wherein the calculation of the calibration equation is obtained using a non-regression technique.

50. The method of claim 34, wherein the method further comprises the step of shifting the data by a predetermined time factor.

51. The method of claim 34, wherein the calibration is performed while sampling the glucose monitor data.

52. The method of claim 34, wherein the calibration is performed retrospectively on the sampled glucose monitor data that has been collected for post processing using the calibration equation post process.

53.   The method of claim 34, wherein one or more calculations for calculating a first calibration factor is different than one or more calculations for calculating all subsequent calibration factors.

54. The method of claim 53, wherein the one or more calculations for calculating subsequent calibration factors employ a weighted average using a calibration factor calculated from data collected since the last calibration and previous calibration factors calculated for previous calibrations.

55.   The method of claim 53, wherein the calculation for calculating a first calibration factor uses a single-point calibration equation.

56.   The method of claim 55, wherein the single-point calibration equation includes an offset value.

57.   The method of claim 55, wherein the calculation for calculating the subsequent calibration factors uses a linear regression calibration equation.

58.   The method of claim 55, wherein the calculation for calculating the subsequent calibration factors uses a non-linear regression calibration equation.

59.   The method of claim 55, wherein the calculation for calculating the subsequent calibration factors uses a non-regression calibration equation.

60.   An article of manufacture containing code for calibrating glucose monitor data, comprising a computer usable media including at least one computer program embedded therein that is capable of causing at least one computer to perform:

sampling glucose monitor data from a sensor;

deriving interval values by applying clipping limits and averaging the post-clipped sampled glucose monitor data over a predetermined interval rate;

deriving at least one glucose monitor data point by averaging the derived interval values at a predetermined memory storage rate;

obtaining from another blood glucose measuring device at least one blood glucose reference reading that is temporally associated with at least one glucose monitor data point;

determining a calibration equation using the at least one blood glucose reference reading and the corresponding at least one glucose monitor data point; and

calibrating the sampled glucose monitor data using the calibration equation.

61. The article of manufacture of claim 60, wherein the step of averaging the sampled glucose monitor data over a predetermined interval rate ignores a high and a low sampled value over the interval.

62. The article of manufacture of claim 60, wherein the step of averaging the derived interval values over a predetermined memory storage rate ignores a high and a low derived interval value obtained during one cycle of the predetermined memory storage rate.

63.   The article of manufacture of claim 60, wherein the calculation of the calibration equation is obtained using linear regression.

64.   The article of manufacture of claim 63, wherein the linear regression is least squares linear regression.

65.   The article of manufacture of claim 60, wherein the calculation of the calibration equation is obtained using non-linear regression.

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66.   The article of manufacture of claim 60, wherein the calculation of the calibration equation is obtained using a non-regression technique.

67.   The article of manufacture of claim 60, wherein the method further comprises the step of shifting the data by a predetermined time factor.

68.   The article of manufacture of claim 60, wherein the calibration is performed while sampling the glucose monitor data.

69.   The article of manufacture of claim 60, wherein the calibration is performed retrospectively on the sampled glucose monitor data that has been collected for post processing using the calibration equation post process.